

# New directions in research regarding prevention for positive individuals: questions raised by the Seropositive Urban Men's Intervention Trial

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The primary purpose of a randomized controlled trial of an intervention is to assess the efficacy of a specific approach to HIV prevention. In the case of the Seropositive Urban Men's Intervention Trial (SUMIT), the primary research question concerned the relative efficacy of a multi-session intervention programme for HIV-positive men who have sex with men (MSM) in terms of changing sexual risk behavior over a single-session comparison condition. However, a secondary goal of any research project is to identify a set of new questions whose answers will move a research field forward. These new questions should point to the future, that is, to identify the 'next generation' of research questions whose answers will change prevention practice so that it is more efficient, more efficacious and more cost-effective. The goal of this paper will be to identify and comment upon some of the crucial questions raised by analysis of data from the SUMIT trial that will be important to the next generation of research questions regarding prevention with HIV-positive MSM.

## How do positive men who have sex with men understand sexual risk?

In the case of MSM who know they are HIV positive, one might think that there would be a straightforward answer to the question of what constitutes sexual risk. Any insertive sex within a serodiscordant pairing that occurs without the benefit of protection carries an elevated probability of HIV transmission, and therefore should be defined as risky. However, consideration of the rates of sexual behaviors among positive MSM reported by Parsons *et al.* [1] in this issue suggests that positive MSM

have taken a much more nuanced view of the definition of sexual risk and sexual safety.

Men in the SUMIT trial were more likely on intake to have unprotected sex with other HIV-positive men than with men of unknown or negative status. In addition, positive men are far more likely to have oral sex than anal sex with men of unknown or negative HIV status, and in such situations are more likely to have receptive rather than insertive oral sex. Similarly, in cases in which positive men have unprotected anal sex with partners of unknown or negative serostatus they are significantly more likely to have receptive rather than insertive anal sex.

These behavioral profiles imply that positive men are attempting to balance their needs for sexual pleasure with sexual responsibility. The epidemiological data that do exist on these points suggest that HIV superinfection occurs rarely [2,3], and that the transmission of HIV via oral sex is also rare [4]. These general epidemiological findings are well known and generally accepted among urban gay men in the United States. The strategy of differentially selecting the receptive over the insertive sexual position during unprotected anal sex parallels findings reported from Australia [5], in which positive men were shown to use 'positional strategies' as a harm reduction method. This strategy follows the widespread sense among MSM that unprotected insertive sex is less likely to transmit HIV infection to a negative man than is unprotected receptive sex [6]; however, the epidemiological data on this point are far less clear. The sexual expression that is unquestionably at the highest level of risk, insertive unprotected anal sex with men of unknown or negative status, was relatively uncommon, and at rates below those typically found among undifferentiated samples of MSM.

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If it is accepted that positive MSM as a group are attempting to reduce the risk of HIV transmission by adopting a range of very specific sexual strategies, some interesting implications emerge. First, regarding the question of the choice between harm reduction and harm elimination approaches to risk, positive MSM seem to be voting in the direction of harm reduction. That is, many positive MSM seem to be seeking strategies to continue their sexual careers while minimizing, but perhaps not absolutely eliminating, the risk of transmission to others. This raises the question to the field of how best to frame health education messages to positive men. That is, will positive MSM be most likely to accept and act on messages that are framed as risk reduction messages or as risk elimination messages? Second, it appears that most positive MSM are acting to reduce the risk of transmission as they understand the epidemiological risks of HIV transmission associated with very specific sexual practices. It should be noted that not all of the specific sexual strategies described above have been assigned rigorous epidemiological estimates of risk, and that even in the case of sexual strategies that are understood to be less risky, certain biologically based circumstances may raise risks to a higher level than are generally understood to exist. For example, is the risk of HIV transmission via insertive serodiscordant oral sex elevated if either partner has a sexually transmitted disease? Is it elevated if a positive partner has an extremely high viral load? These very specific circumstances raise the question to the field of how best to meet the informational needs of positive MSM about the specific sexual practices that are most likely to result in HIV transmission, or conversely, least likely to do so. If positive MSM are acting on very specific sexual risk reduction strategies, then they would probably benefit from having available to them rigorously studied epidemiological estimates of the risks associated with these very specific strategies. There may be few lay audiences who will read and think about epidemiological estimates of transmission risk as carefully as will HIV-positive MSM.

The importance of these points is highlighted when one considers the importance of two variables to the dominant theories of health behavior change: information and intention to change behavior. Although information is not sufficient to change behavior, information is generally necessary to the formation of specific intentions to change risky behavior. To the extent that specific information necessary to change behavior is either unavailable or contested within a specific community, varying intentions to change behaviors are likely to be formed. Therefore, without clear messages about the HIV transmission risks associated with specific sexual practices based on rigorous epidemiological research, understanding about what constitutes safe sex will continue to be contested within the MSM community, a debate that in turn is likely to lead to the formation of varied intentions to change sexual practices among positive MSM.

### What are the effects of co-occurring epidemics among HIV-seropositive men who have sex with men?

Men in the SUMIT trial reported high levels of other risk factors to health than those associated with high-risk sex or HIV infection alone, most notably illegal substance use. The paper by Purcell *et al.* [7] in this special issue reports very high levels of substance use among HIV-positive MSM. In addition, rates of injecting drug use with this same sample of positive men were so high that they permitted a rare examination of the behavioral profile of MSM injecting drug users, as reported in this issue by Ibañez *et al.* [8]. Data from other research projects report high levels of depression [9], tobacco use [10], and partner violence [11] among positive MSM. In addition, HIV-positive MSM struggle with ongoing stigma attached to being homosexual and infected with HIV [12]. Furthermore, some HIV-positive MSM live on very limited economic resources, even to the point of being homeless [13]. It is clear that many HIV-positive MSM are challenged with dual or even multiple psychosocial health problems.

This situation raises the question of whether different psychosocial epidemics are not only co-existing but also interacting among positive MSM, and so amplifying the effects of each other. This situation is known in the public health literature as a syndemic [14]. An analysis of a separate household-based sample of MSM has already demonstrated that multiple epidemics are indeed intersecting and amplifying the effects of each other. Furthermore, the same study demonstrated a strong positive association between the probability of high-risk sex and HIV seropositivity and a greater number of psychosocial health problems [15]. It can thus be expected that to the extent that positive MSM are also challenged by such psychosocial problems as substance abuse, depression, economic and housing marginalization and violence, they are more likely to engage in high-risk sex.

If it is accepted that positive MSM are a population that is challenged by multiple health problems, some interesting implications for prevention practice emerge. Notably, prevention practice among positive MSM has tended to regard HIV as the primary health problem faced by these men. However, this perception may not be shared by all positive MSM, who may, in fact, prioritize their struggles to obtain stable housing, high quality medical care or long-term sobriety over the needs imposed by HIV infection [16]. This raises the question to the field of whether prevention programmes for positive individuals that address a broad range of psychosocial health problems might elicit greater participation and be regarded as more useful by positive individuals than prevention programmes that focus on HIV transmission risk alone.

It should also be pointed out that the possibility of syndemics also holds important theoretical implications for prevention practice. Again, the dominant theoretical approaches to behavior change assume that individuals are free to change their behavior, even though this freedom is modified by the bounds imposed by sociocultural systems. However, the question should be asked as to whether individuals who are mired in the effects of depression, substance use, violence and poverty can really be regarded as individuals who are free to change their behaviors. If not, then preliminary prevention work should be attempted to help extricate such individuals from the constraints imposed by multiple psychosocial health challenges, while also working to address HIV prevention needs. Such 'joined' public health practice might also work to improve the recovery rates from these other important psychosocial health problems.

### **How should the responsibility for HIV prevention be shared between positive and negative men who have sex with men?**

HIV-positive men bear many burdens associated with the medical consequences of HIV infection; to these is also added the responsibility that they should not infect any of their sexual partners over very long periods of time. Because not all positive men know that they are positive and because, like negative men, not all are consistently safe, some measure of the responsibility for prevention also needs to be borne by uninfected men. This is particularly true for newly infected men, who may not be aware of their HIV infection, have high viral loads associated with primary infection, and may be more likely to transmit HIV infection in the case of unprotected sexual contact. This situation raises the question of how best to assign the responsibility for HIV prevention between positive and negative men. The importance of this point is highlighted in the analyses by O'Leary *et al.* [17], to reveal that personal responsibility and altruism are substantial correlates of behavior change in the SUMIT trial.

This responsibility almost certainly needs to be borne by both groups of men. For example, if prevention programmes were designed only to meet the needs of positive men, how would low rates of risk be maintained among negative men? The obverse to this rhetorical question also holds true. In addition, if the message goes out that prevention is an unspecified community responsibility, does that message undermine a sense of personal vigilance to prevent further HIV transmission among positive and negative men alike?

The epidemiological realities of the sexual transmission of HIV among MSM thus almost certainly demand that HIV prevention be tailored to meet the needs of both positive

and negative men. In both cases, strategies and personal responsibility for the prevention of HIV transmission need to be clarified. For this reason, ongoing prevention research and programmes need to be defined and refined to meet the specific needs of both positive and negative men, and careful attention needs to be devoted to defining the optimal mix of interventions of positive and negative men.

### **How can sexual safety be supported for long periods of time by positive men?**

We have yet to learn to what extent the limits on life expectancy have been expanded by antiretroviral therapy, but access to antiretroviral drugs certainly lengthens the life course of HIV-positive individuals by many years, if not decades, of life. This means that prevention with positive individuals is no longer just a matter of the initiation of behavior change, but also the maintenance of behavior change over long periods, and even stages, of the life course.

It is safe to say that far more attention has been devoted to interventions designed to initiate behavior change among HIV-positive individuals than to maintain such change over long periods of time. Interventions that measure the maintenance of behavior change among HIV-positive individuals for longer than one year are nearly non-existent. This situation raises for the field the issue of how best to maintain sexual and drug use safety among HIV-positive populations for long periods of time.

Commentary on previous questions has alluded to the importance of theory in terms of understanding how best to address questions of behavior change, a precedent that will also be followed regarding the question of the maintenance of behavior change. To start, it might be useful to consider the extent to which the dominant theories of behavior change emphasize the initiation of behavior change over maintenance. If it is concluded that current theory could be expanded to address the question of maintenance, identifying a list of proposed variables to be included in an expanded theory of behavior change maintenance might be useful. Such variables might include the consideration of structural variables (access to healthcare, housing and socially recognized long-term relationships), the value of the positive reinforcement of behavior change (increased health, sense of well-being and sense of personal esteem as a result of long-term safety), sense of ethical responsibility (sense of altruism in protecting negative individuals from infection and responsibility to one's community), and access to group support for behavior change (sense of refuge from stigma, access to group support for maintaining safety and access to long-term supportive relationships). Although other variables might also be identified as important to a theory

of behavior change maintenance, these may serve as a starting point to expand theory that focuses on the individual-level initiation of behavior change to that of the maintenance of behavior change in the context of a larger social-cultural environment.

### How can the optimal balance between self-interest and altruism be found to support safety among positive men?

As has been noted above, HIV-positive men are a group that faces numerous health challenges, to which is added the burden of ensuring that no further HIV transmission occurs as a result of their behavior. Perhaps it is because of these challenges that some of the discourse around prevention with positive individuals focuses on the vulnerability of this population to the possibility of HIV transmission, rather than their strengths. This tendency raises the question of whether prevention with positive individuals has sufficiently drawn upon the strengths of this population in managing risk.

Certainly there is substantial evidence to suggest that positive MSM bring considerable strengths to the field of prevention, not only in terms of the historical advocacy of this group around AIDS issues, but also in terms of the low levels of self-reported HIV risk reported by most samples of positive MSM. As already pointed out by Nimmons and Folkman [18], these two characteristics suggest that at least two commonly encountered strengths, those of altruism or communal values, have been operating among positive MSM since the earliest years of the epidemic, and that these strengths might be tapped as a basis for HIV prevention work by positive individuals [19]. Most HIV prevention work for positive individuals has tended to emphasize self-protection over altruism, although the SUMIT trial itself devoted important attention to altruistic motivations to protect others. This raises the question of whether we have found the proper balance in intervention programmes between messages that emphasize self-interest and those that emphasize the altruistic protection of others.

Self-interest can be regarded as a strength among positive men, in that it is a basis of long-term self-care and behavioral regulation of risk behaviors. Positive men who are shown data that demonstrate how re-infection with sexually transmitted diseases (and possibly HIV superinfection) can speed up disease progression are likely to lower sexual risk levels. The potential utility of altruism in prevention work has several theoretical bases. First, an emphasis on altruism in the sexual context carries with it an emphasis on potential harm to others. The importance of negative framing for the consequences of sexual behaviors has recently been tested in an intervention trial, with statistically significant effects demonstrated for the

intervention that emphasized negative consequences for patients or their sexual partners for particular sexual acts [20]. Second, by emphasizing altruism as a goal for positive individuals, the importance of maintaining a social norm that supports consistent sexual safety is reinforced, as is the efficacy for positive individuals to support that social norm. Finally, to the extent that altruism is publicly recognized as a widely shared social norm among HIV-seropositive MSM, it is possible that the stigma associated with HIV seropositivity will be decreased. That is, by demonstrating to the larger community that most seropositive individuals are taking daily actions to stop the spread of HIV infection, they will be appropriately seen as key actors in the fight to stop AIDS, a perception that is likely to decrease the stigma associated with being HIV positive. Each of these mechanisms for behavior change are supported by current theories of behavior change.

In conclusion, although the SUMIT trial did not yield statistically significant differences between the treatment and control groups at the 6-month wave of data collection, this does not mean that the study did not yield important results. For example, the analyses by O'Leary *et al.* [17], reveal where the intervention fell short and illuminate ways to succeed in the future. The goal of this short essay has been to show that the results of the SUMIT trial have raised important questions about how best to conduct prevention with positive individuals. These topics include the need to focus on understanding more about how seropositive individuals conceptualize transmission risk, a more in-depth understanding of the effects of multiple epidemics among HIV-seropositive individuals, the sharing of responsibility between seropositive and seronegative individuals, the need to understand more about maintaining sexual safety for long periods of time, and the need to find an optimal balance between self-interest and altruism. It is to be hoped that this set of questions, among others that can and should be raised in this field, will result in the definition of research studies whose answers will provide empirically supported methods for supporting ongoing safe behaviors among HIV-positive MSM.

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